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Botulinum Toxin E EB-001

National Cancer Institute

Source

National Cancer Institute. *Botulinum Toxin E EB-001*. NCI Thesaurus. Code C159407.

An injectable formulation containing the bacterial *Clostridium botulinum* type E neurotoxin, with neuromuscular transmission inhibitory and analgesic activities. Upon injection of botulinum toxin E EB-001 into the muscles of the affected area, the heavy chain portion of botulinum toxin type E binds to the cell membrane of the presynaptic nerve terminal and is internalized via endocytosis. Upon entry into the cytoplasm, the light chain portion of the toxin binds to and cleaves synaptosomal-associated protein 25 (SNAP-25), thereby preventing the fusion of acetylcholine (ACh)-containing synaptic vesicles with the cell membrane and, thus the release of the neurotransmitter ACh into the neuromuscular junction. This prevents the binding of ACh to the motor end-plate nicotinic acid receptors and ACh-mediated muscle contraction. This causes flaccid paralysis and may decrease musculoskeletal pain and may improve wound healing and reduce scar formation due to the absence of muscle contractions. In addition, EB-001 may inhibit the release of neuropeptides, such as substance P and glutamate, which may contribute to its analgesic activity. Compared to other botulinum toxin types, type E has the fastest onset and the shortest duration of action.